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YOUNG, Hugh H.

Long, the discoverer of anaesthesia.  
Johns Hopkins Hospital Bulletin, 1897.

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dered." As his studies seemed to prove that the contagion which remains in the female "after intercourse, as the efficient of the future offspring, is not of the nature of any corporeal substance," he was unable to escape the admission that it is "incorporeal." Thus driven to the wall, if he had taken refuge in "soul" or "spirit," no one could greatly blame him, for spiritual agents had been the resource of philosophers for many ages before his time. He was a true soldier of science, however, seeing as clearly as we do that this venerable formula can do nothing to help us, and preferring outspoken ignorance to this antiquated and threadbare cloak for intellectual poverty.

"If on further inquiry it should appear that it [the efficient] is neither spirit nor demon, nor soul, nor any part of a soul; as I believe can be proved by various arguments and experiments, what remains, since I am unable myself to conjecture anything beside . . . but to confess myself at a standstill?"

What does the modern man of science in such a case? Does he not search through the whole province of knowledge to see if perchance he may find some other natural phenomenon which bears some resemblance to the subject of his studies? Harvey says he knows well "that some censorious persons will laugh at this . . . Yet this that I do is the practice of philosophers, who when they cannot clearly comprehend how a thing really is brought to pass, devise some mode for it in accordance with the other works of nature, and as near as possible to what is true."

"Since, then, nothing can be apprehended by the senses in the uterus after coition, and since it is necessary that there be something to render the female fruitful, and as this is probably not material, it remains for us to take refuge in a mere conception."

Men of science in all ages, from Aristotle to Tyndall, have believed in the virtues of the provisional hypothesis; and, armed by eminent authority, Harvey undertakes, by comparing a "mere conception" with other things in nature, to frame a provisional hypothesis of generation; but natural science seems to be an uncongenial soil for the nurture of such attempts, and if time has shown that Harvey's hypothesis has little value, he errs in good company, and he also takes pains to say he does not wish it "to be taken as if I thought it a voice from an oracle," although he does hope it may "stir up the intellects of the studious to search more deeply into so obscure a subject."

Starting with the belief that "the semen of the male does not so much as reach the cavity of the uterus . . . and that it carries with it a fecundating power by a kind of contagious property" from which the female "seems to receive influence and to become fecundated without the co-operation of any sensible corporeal agent, in the same way as iron touched by the magnet is endowed with its powers and can attract other iron to itself," he holds that "when this virtue is once received the woman exercises a plastic power and produces a being after her own image."

"Yet it is a matter of wonder where this faculty abides after intercourse is completed. . . . To what is the active power of the male committed? . . . Does the woman conceive in the womb as we see by the eye and think by the brain?" "Since there are no manifest signs of conception before the

uterus begins to relax . . . and since the substance of the uterus, when ready to conceive, is very like the structure of the brain, why should we not suppose that the function of both is similar, and that there is excited by coitus within the uterus a something identical with or at least analogous to an imagination or a desire in the brain, whence comes the generation or procreation of the ovum?" "For the functions of both are termed conceptions, and both, although the primary source of every action throughout the body, are immaterial, the one of natural or organic, the other of animal action . . . Just as a desire arises as a conception of the brain, and this conception springs from some external object of desire, so also from the male, as being the more perfect animal, and as it were the most natural object of desire, does the natural (organic) conception arise in the uterus, even as the animal conception does in the brain. From this desire, or conception, it results that the female produces an offspring like the father. For just as we, from the conception of the 'form' or 'idea' in the brain, fashion in our works a form resembling it, so in like manner the 'idea' or 'form' of the father, existing in the uterus, generates an offspring like himself with the help of the formative faculty.

"Whoever has pondered with himself how the brain of the artist, or rather the artist by means of his brain, pictures to the life things which are not present in him, but which he has once seen; also in what manner birds immured in cages recall to mind the spring, and chant exactly the songs they had learned the preceding summer, although meanwhile they had never practiced them; again, and this is more strange, how the bird artistically builds its nest, the copy of which it had never seen, and this not from memory or habit, but by means of an imaginative faculty, and how the spider weaves its web, without either copy or brain, solely by the help of this imaginative power; whoever, I say, ponders these things, will not, I think, regard it as absurd or monstrous, that the woman should be impregnated by the conception of a general immaterial 'idea' and become the artificer of generation."

"For my own part then, when I see nothing left in the uterus after intercourse, to which I can ascribe the principle of generation, any more than there is in the brain anything discoverable after sensation and experience, which are the prime sources of art, and when I find the structure of both alike, I have devised this fable."

Whatever the value of this hypothesis may be, it serves well to emphasize the fact that Harvey's opinions on generation have nothing in common with the modern discovery of the physical continuity of living matter, and it shows that his teaching that all animals come from eggs cannot possibly mean what the words now mean.

He believes the uterus conceives an animal in the same way that the brain conceives an idea; and he also tells us that he agrees with Fabricius that "the egg [of the hen] is in a certain sense an exposed uterus" (290).

Furthermore, "the hen is not the efficient cause of a perfect egg, but that she is made so in virtue of an authority, if I may use the word, or power required of the cock. For the egg, unless prolific, can with no kind of propriety be accounted perfect; it only obtains perfection from the male, or rather



from the female, as it were upon precept from the male, as if the hen received the art and reason, the form and laws of the future embryo from his addresses" (290). So much for the generation of the fowl. In Exercise the sixty-ninth he describes the embryo of the doe at about seven weeks, and the human embryo about the second month after conception, but, following Aristotle, he regards these embryos in their membranes, not as embryos, but as eggs without shells. "In the way above indicated do the hind and doe, affected by a kind of contagion, finally conceive and produce primordia, of the nature of eggs, or the seeds of plants, or the fruit of trees, although for a whole month and more they had exhibited nothing in the uterus."

In this sense, then, he holds that viviparous animals are generated from eggs. He therefore maintains (as contrasted with Fabricius, who held that the greater number of animals are produced from ova) "that all animals, even the vivipara, and man himself not excepted, are produced from ova; that the first conception, from which the foetus proceeds in all, is an ovum of one description or another, as well as the seed of all kinds of plants. Empedocles therefore spoke not improperly of the 'egg-bearing race of trees.' The history of the egg is therefore of the widest scope, as it illustrates generation of every description. . . . Fabricius has these additional words: "The foetus of animals is engendered in one case from an ovum, in another from the seminal fluid, in a third from putrefaction; whence some creatures are oviparous, some

viviparous, and yet others born of putrefaction or by the spontaneous act of nature, automatically."

"Such a division as this, however, does not satisfy me, inasmuch as all animals whatsoever may be said in a certain sense to spring from ova, and in another sense from seminal fluid, and they are entitled oviparous, viviparous or vermicarous rather in respect of their mode of bringing forth than of their first formation."

We see then that, unfamiliar as his words often seem, and while he holds that the organizing influence which produces the chick from the egg is a "divine mystery," we owe to Harvey the demonstration and clear formulation of the following truths:

There is no basis for the venerable doctrine that the higher animals are generated from excrement.

The hen's egg, even before it leaves the ovary, is an independent organism, which enjoys life by its own right, and perfects itself by nutrition.

The embryo assimilates homogeneous food, and by means of an inherent organizing power converts it into the structure of the living animal. Nutrition, growth and development go on together, and the embryo arises by epigenesis or differentiation.

Many animals which have been held to arise from putrescent slime actually come from microscopic eggs.

"Animals are entitled viviparous or oviparous or vermicarous rather in respect of their mode of bringing forth than of their first formation."

## LONG, THE DISCOVERER OF ANÆSTHESIA.

### A PRESENTATION OF HIS ORIGINAL DOCUMENTS.

BY HUGH H. YOUNG, A. M., M. D., *Assistant Resident Surgeon, Johns Hopkins Hospital, Baltimore.*

[Being in substance a paper read before the Johns Hopkins Hospital Historical Society, November 8, 1896, with additions.]

It was my good fortune last summer to meet Mrs. Fanny Long Taylor, whose father, Dr. Crawford W. Long, is thought by many to be the original discoverer of anæsthesia.

As she put me in possession of her father's papers, I thought they might prove sufficiently interesting to warrant their presentation to this Society.

During the famous ether controversy which was waged in the forties and fifties the work of Long received little attention. A modest, retiring man, who abhorred public strife and controversy, too honorable to wish pecuniary reward for his discovery, it is not strange that he made no effort to get the reward from Congress, but preferred to let the justice of his claim be judged by an unbiassed posterity.

Crawford W. Long was born in Danielsville, Ga., on the first of November, 1815. His grandfather was Capt. Samuel Long of Pennsylvania, who made a brilliant record in the Revolutionary war and was one of Lafayette's captains at Yorktown. Soon after the close of that eventful struggle he left his native State and took his family to Georgia, where they settled along with a large colony of Pennsylvanians.

His son, James Long, received every educational advantage

there obtainable, and inheriting his father's executive ability, became one of the prominent men of his State. Although engaged in mercantile pursuits he was a hard student of the law, and so well versed in the principles of jurisprudence that he was often consulted by judges in difficult cases.

He represented his people in the Senate for a number of years and was the intimate friend, adviser and confidant of Wm. H. Crawford, Georgia's greatest statesman, at different times Secretary of State, minister to France and candidate for the Vice-Presidency. As an evidence of attachment he gave his eldest son the name of Crawford. Coming from such ancestry it is not wonderful that young Crawford early showed promise of rare ability. As a boy he was studious and mature beyond his years, and entered Franklin College at so early an age that he was known as "baby." Notwithstanding this fact he graduated as Master of Arts second in his class at the age of nineteen. Alexander H. Stephens was his room-mate, and so much older that he was dubbed "daddy" by the college boys. Though pursuing different paths, Stephens and Long kept up an intimate friendship all their lives. After studying under a preceptor for one year

Long graduated at the University of Pennsylvania in 1839. While there he was recognized as a man of marked ability and fond of experimental work.

After graduation he spent one year in a New York hospital, where, it is said, he made such a reputation for himself as a surgeon that he was urged to apply for the position of surgeon in the U. S. Navy. Obedient to his father's wishes, however, he returned to practice in his native State and located in Jefferson, Jackson Co., Georgia, in 1841, at that time a small country town, far removed from any railroad, in the midst of a farming community whose only factory was the cotton gin.

Here Dr. Long soon acquired an extensive and lucrative practice, and although young was noted for his quiet, dignified bearing, which endeared him to all. His office was a favorite meeting-place for the young men of the town, who would often gather there to pass a merry evening together.

About this time it became fashionable to inhale laughing-gas for its exhilarating effects. Itinerant lecturers on chemistry would conclude an evening's entertainment with a nitrous-oxide party in which the participants would get gloriously drunk from its inspiration.

The practice spread throughout the country, and at Jefferson during the early part of the winter of '41 a coterie of young friends begged Dr. Long to let them indulge in the far-famed luxury.

Dr. Long replied that he had no means of preparing nitrous-oxide gas, but that sulphuric ether would produce similar exhilaration. The company being anxious to try it, the ether was produced, all inhaled of it and soon became hilarious.

The young men were delighted and hastened to tell their friends of Dr. Long's wonderful drug, and thus the inhalation of ether for sport soon became very popular over that section of Georgia, and almost every party ended up with an "ether frolic," as it was called.

During January, 1842, the ether frolics at Dr. Long's office became very frequent and were well attended, and some of the young men probably became pretty thoroughly intoxicated, as Dr. Long discovered that he and others would afterward have considerable bruises about their persons of which they had no knowledge.

Being a thoughtful man, *he at once remarked that ether must have the power of rendering one insensible to pain, and therefore available for preventing pain in surgical operations.*

This was January, 1842, and Dr. Long at once determined to prove his discovery on the first surgical case he should have. That opportunity came on March 30th, when Long administered ether to Mr. James M. Venable till completely anesthetized, and then excised a small cystic tumor from the back of his neck. Imagine the surprise of the patient when on regaining consciousness he was told that the operation was over, and his amazement when he saw the tumor in the hands of the surgeon and he had not felt a scratch. This was four and one-half years before Morton's earliest claims.

An original paper read by Dr. Long before the Georgia State Medical Society in 1852, describing these events in his own words, is appended to this paper—see Appendix I.

It is worthy of note that two and a half years later Wells of Hartford discovered the anæsthetic powers of nitrous oxide

under very similar circumstances. He attended an entertainment given by a popular lecturer on chemistry, inhaled nitrous oxide for its exhilaration, and saw a man under its influence injure his ankle severely without being conscious of it. From this he concluded that nitrous oxide was capable of producing anæsthesia and proved it in extracting a tooth.

Morton, on the other hand, got his suggestion as to the anæsthetic power of ether from Jackson, who, after using ether to relieve the pain and dyspnoea following the accidental inhalation of chlorine gas—an antidote well known in chemistry then—inferred that it might be useful as an anæsthetic. Jackson did not test the correctness of this observation, which he claims to have made about the same time that Long etherized his first case, but left it for Morton to prove practically four and a half years later.

Dr. Long reports the first five cases in which he used ether, being desirous only of establishing priority of use. An examination of the letters and certificates before me, however, shows that he must have operated on at least eight cases before Morton's "discovery." This number seems small, but is not so astonishing when we remember that the country was sparsely settled, that Jefferson was a mere village, and Long had just entered practice.

I will now read in substantiation of these statements a copy of the original account in Dr. Long's journal against Mr. Venable for medical services rendered, certified to by a clerk of the Superior Court.

"James Venable

To Dr. C. W. Long, Dr.

	cts.
1842.	
January 28th, sulphuric ether,	.25
March 30th, sulphuric ether and exsecting tumor,	2.00
May 13th, sul. ether,	.25
June 6th, exsecting tumor,	2.00

Georgia, }  
Jackson County. } I, P. F. Hinton, clerk of the superior court of said county, do certify that the above account is a correct copy of an original entry made in his book for medical services for the year 1842.

Given under my name and seal of office this 27th of March, 1854.  
[Seal] (Signed) P. F. HINTON, Clerk S."

The following paper relative to the fashion of inhaling ether for its exhilarating effects is interesting as showing how the custom in Georgia started with Dr. Long:

"I certify that on the first of January, 1842, I resided in Jefferson, Jackson Co., Georgia, and that about that time myself with several other young men were in the habit of meeting at Doct. C. W. Long's shop, and other rooms in the village, and inhaling ether which *he administered to us.*

On the 20th of January of the same year I removed to Athens, where I introduced the inhalation of ether. I and several of my young associates frequently assembled ourselves together and took it for the excitement it produced. After that I know it became very common to inhale ether in Athens, and that it was frequently taken in the college campus and on the street.

(Signed) R. H. GOODMAN,  
Athens, Georgia."

August 4th, 1849.

When we see daily the dreadful distaste patients who have been etherized have for ether, it seems strange that any one could become fond of its use.



I will now read an account of the first operation as given by Mr. James M. Venable:

"I, James M. Venable, of the county of Cobb and State of Georgia, on oath depose and say, that in the year 1842 I resided at my mother's in Jackson County, about two miles from the village of Jefferson, and attended the village academy that year.

In the early part of the year the young men of Jefferson and the country adjoining were in the habit of inhaling ether for its exhilarating powers, and I inhaled it frequently for that purpose, and was very fond of its use.

While attending the academy I was frequently in the office of Dr. C. W. Long, and having two tumors on the back of my neck, I several times spoke to him about the propriety of cutting them out, but postponed the operation from time to time. On one occasion we had some conversation about the probability that the tumors might be cut out while I was under the influence of s. ether, without my experiencing pain, and he proposed operating on me while under its influence.

I agreed to have one tumor cut out and had the operation performed that evening after school was dismissed. This was in the early part of the spring of 1842.

I commenced inhaling the ether before the operation was commenced and continued it until the operation was over. I did not feel the slightest pain from the operation and could not believe the tumor was removed until it was shown to me.

A month or two after this time Dr. C. W. Long cut out the other tumor, situated on the same side of my neck. In this operation I did not feel the least pain until the last cut was made, when I felt a little pain. In this operation I stopped inhaling the ether before the operation was finished.

I inhaled the ether, in both cases, from a towel, which was the common method of taking it.

Georgia,	}	(Signed) JAMES M. VENABLE.
Cobb Co.,		Sworn to before me.
July 23rd, 1849.		ALFRED MANES, J. P."

This operation was done in the presence of four witnesses, Jas. E. Hayes, A. T. Thurmond, W. H. Thurmond, principal of the academy, and Edmund S. Rawls, the last of whom testifies as follows:

"Georgia, } I, Edmund S. Rawls, of Rome, Floyd Co., Ga., on Clarke Co. } oath depose and say that . . . on one occasion during that year (1842) I was present with James M. Venable in the office of Dr. C. W. Long in Jefferson, Jackson Co., Ga., and witnessed Dr. C. W. Long cut out a tumor from the side of neck of J. M. Venable while said Venable was fully under the effects of the vapor of s. ether inhaled from a towel, and without his exhibiting the least symptoms of suffering pain from the operation. J. M. Venable was so unconscious of the operation having been performed that he would not believe the tumor was removed until it was shown him.

(Signed) E. S. RAWLS.

Sworn to and subscribed before me this 2nd November, 1853.

E. L. NEWTON, J. J. C."

The patient continued to inhale ether until the operation was over, was entirely unconscious of its performance, and felt no pain. Surely this was complete anæsthesia. This fact has been denied by Dr. Wm. J. Morton, son of the Boston discoverer, who says it was no more than mere exhilaration.

It has been stated that Long kept his discovery secret and that he therefore deserved no credit for it. I present certificates from Drs. Laperriere and Carlton, which show that his work was well known to citizens of the town of Jefferson and neighboring cities, particularly Athens, which was then the

centre of learning and culture in Georgia; that it was considered a remarkable discovery by the populace, and that the prominent physicians knew of it and realized its importance. See Appendix II.

Dr. Carlton was then a student under Dr. Moore. One year later (1844) he used ether in extracting a tooth. This was probably the first use of ether in extracting teeth. Dr. James Camak, another student of Moore, was present and assisted in the same operation and corroborates Carlton's statements.

Can Dr. Long be blamed for not publishing at once a report of his first case or two when they were well known to the physicians of that part of the State? He had no Massachusetts General Hospital at his back, and he knew that such startling claims coming from one so young (he had not been practicing one year) would be severely criticised. It is but natural that he should be satisfied for the time being with the local and State publicity which was given to his great discovery, and waited until he could make a comprehensive report embracing all kinds of cases, such as every careful investigator does to-day.

But he kept on with his work, operating on two more cases under ether in 1842, and about three more during the next year, for most of which I find sworn certificates.

I have a letter from his first student, Dr. J. F. Groves, which is of particular interest as giving an insight into the character of Dr. Long and his work at that time. It is quite lengthy and I omit portions of it. The letter is written to Mrs. Taylor, Dr. Long's eldest daughter. See Appendix III.

This letter shows conclusively that Dr. Long was thoroughly convinced of the anæsthetic powers of ether, but was anxious to put it to a severe test in capital surgery. He withheld his cases of minor surgery because he wished to determine accurately the limitations and possibilities of ether.

In his paper Dr. Long does not give the details of the etherization with the minuteness we should desire. For instance, he does not say who gave the ether, the patient or himself, and he does not explain whether the patient was entirely unconscious or not, but simply remarks that he suffered no pain and did not know the tumor had been removed.

These omissions of Dr. Long led Dr. Wm. J. Morton, of New York, to write a forty-eight-page article in the Virginia Medical Monthly, March, 1880, in which by dexterously quibbling with Long's innocent statements he arrives at the conclusion by a skilful process of deduction, that Long never did anything. I will read parts of this article:

#### "THE INVENTION OF ANÆSTHETIC INHALATION.

\*\*\* But we will proceed slowly. We must know who is giving the ether. Of the first operation Venable deposes under oath, 'I commenced inhaling the vapor before the operation was commenced and continued it until the operation was over.'

Thus Venable kept his eye on the whole affair, knew just what was going on, otherwise how could he know and swear to it that he continued the inhalation until the operation was over. Surely *Venable administered the ether to himself and remained conscious all the time.*"

This is erroneous, for according to good legal authority

such a statement as Venable's could be made from a knowledge based on satisfactory hearsay evidence and would be accepted in law.

But he goes on: "But now comes the damnatory point of this second experiment. *The patient felt pain.* This both Long and Venable confess. Here then is positive failure; Dr. Long's anæsthetic state was nothing more nor less than the fleeting peripheral numbness often associated with the first or exhilarating stage of the complete anæsthesia of to-day. But why did Dr. Long not take the towel into his own hand and force the ether? Why not make his patient insensible to pain if he knew this could be done?

"Knowing what medicine knows to-day, how wonderful this halting of Long—this pause at a most critical moment—on the very threshold of discovery! So nicely balanced is the situation that it almost seems as if he would topple over into discovery; but he falls the other way.

"It seems almost inexplicable that he did not seize the towel, force the anæsthesia to the stage of stupor, perform the operation, and proclaim the discovery to the world,"—

and we might add, patent it at once!

It is a fact well known to all surgeons that a patient may be entirely unconscious and still retain sensibility to pain. This is evidenced by the flinching before the knife when in this state. He may give evidence of feeling pain, but have no recollection of it afterward. All witnesses agree that Venable gave no evidence of feeling pain in the first operation. He must have been pretty thoroughly anæsthetized. The second operation was merely a test case to determine the length of the anæsthetic state, and although the ether was discontinued from the beginning of the operation (which Long says was tolerably difficult on account of adhesions), still the anæsthetic state lasted until the last cut was made. We would consider such a patient pretty thoroughly anæsthetized in Baltimore.

I have recently tested a number of patients who were being anæsthetized and found invariably that consciousness was lost before sensibility to pain—as evinced by movement of a member when pricked with a pin.

It was therefore practically certain that no person could administer ether to himself, an act requiring consciousness—and become sufficiently anæsthetized for even very small operations; but in order to settle the question definitely I determined to administer ether to myself, using the same methods as were employed by Long in 1842.

Accordingly, under the direction of Dr. F. R. Hagner of Washington, I placed a folded towel over my face and poured

ether upon it from time to time at his bidding, as long as I was conscious. During this time Dr. Hagner pricked me with pins up to the last application that I remember. Toward the last the pin pricks did not produce the usual sensation of pain, but a peculiar disagreeable clanging sound in the ear.

Dr. Hagner thus briefly describes the experiment: "Dr. Young poured ether on the towel when so instructed by me. After a number of such additions the movements of his arm became very unsteady and he would spill some of the ether on his neck. Soon after the last application, made at my request, I pricked him with a pin and he moved his leg. I then instructed him several times to add more, but he made no attempt to do so and seemed unconscious. I then pricked

him with pins several times, but received no response for about a minute, when he again responded to a prick of pin and suddenly became conscious. Complete consciousness returned almost immediately.

"I feel certain that he lost consciousness before sensibility to pain, and that if I had attempted to do the smallest surgical operation he would have been conscious of pain before its completion."

It is therefore certain that Venable would have been conscious long before the small tumor was removed and would have suffered considerable pain, if he had conducted his own etherization. Nor is it probable that Long intended to convey that idea. We might with propriety say to-day that our patients "inhale ether until anæsthetized," if we did not care to specify the details of

etherization. But in a document quoted above R. H. Goodman says, in speaking of the ether frolics, "We were in the habit of meeting at Dr. Long's shop and *inhaling ether which he administered to us.*" It seems probable therefore that some one administered ether to the persons on whom he operated, too.

Desirous of settling these trivial points on which Morton would have Long deprived of every honor, I addressed a letter a few days ago to Long's first student, Dr. J. F. Groves, whose document I have quoted above. I saw that he would now be about 75 years of age and waited for an answer with considerable anxiety. To my surprise and delight I received a letter from him yesterday which supplies all of Dr. Long's omissions. Dr. Groves did not see the first operations, as he did not enter Dr. Long's office till 1844, but soon after his entrance he assisted in the operation on the negro boy in which two fingers were amputated, early in 1845, and at my request he describes this etherization in detail.



DR. CRAWFORD W. LONG.



As this case occurred a year and a half before Morton's discovery, it is equally good as the first for my purposes. It is as follows:

A RECENT LETTER FROM LONG'S FIRST STUDENT.

"COHUTTA, GA., Jan. 15th, 1897.

DR. HUGH H. YOUNG,

*Dear Sir:* \* \* \* The patient was placed in a recumbent position, on a bed, with hand to be operated on to the front for convenience to the surgeon. Dr. Long poured ether on a towel and held it to the patient's nose and mouth, too, to get the benefit of inhalation from both sources. Dr. Long determined when the patient was sufficiently etherized to begin the operation by pinching or pricking him with a pin. Believing that no harm would come of its use for a reasonable length of time he profoundly anæsthetized the patient, then gave me the towel and I kept up the influence by holding it still to the patient's nose. The patient was entirely unconscious—no struggling—patient passive in the hands of operator. After a lapse of fifty years you would hardly suppose that a man could remember every minute detail, but I have clearly in mind all the facts I have given you.

Your ob't servant,

(Signed) J. F. GROVES, M. D."

Long then administered ether as it is done to-day. He did not pause at the threshold of discovery or topple the other way, but kept right ahead and by careful observation, experimentation and reflection discovered that ether was a safe, sure and complete anæsthetic.

Nor did his patients etherize themselves and at the same time superintend the operation, as Dr. Morton would have us believe.

As quoted above, Morton grasps eagerly at the acknowledgment of pain at the end of the second operation, where the ether had been discontinued, and from that isolated instance characterizes all of Dr. Long's cases as failures. But in his eagerness to annihilate Dr. Long he seems to have overlooked the fact that in the first report of anæsthesia with Morton's "Letheon" at the Massachusetts General in 1846, Dr. Bigelow\* says, in speaking of the first operation, "During the operation the patient muttered as in a semi-unconscious state, and afterwards stated that the pain was considerable," and in the second, "The operation lasted four or five minutes, during which time the patient betrayed occasional marks of uneasiness." But these certainly were not failures, although the anæsthesia was not as complete as in Dr. Long's previous cases.

In his paper Long speaks of "those high in authority who were advocating the mesmeric state as adequate to prevent pain in surgical operations." Contemporary medical literature furnishes ample verification of these statements, according to Dr. Grandy,† who says:

"The journals were full of discussions upon the phenomena of mesmerism, animal magnetism, etc., and wonderful reports were coming from European hospitals of operations done without pain during the 'magnetic sleep.'

"Jules Cloquet had excised a cancerous breast with the axillary glands and the patient showed no sign of pain. Top-

ham of London, in 1843, had amputated a thigh, and Dr. Dugas of Augusta, Georgia, in 1845, twice extirpated the mamma of a female under the mesmeric sleep.

"We can imagine what effect these cases had on the mind of Long. Need we wonder therefore that he was the more particular in his experiments on etherization. Such were the reasons for his silence, and while the sequel was unfortunate, his course was cautious and commendable."

While thus waiting, his opportunity was lost. A second discovery was made in Boston in 1846, was published immediately, and anæsthesia became the property of the world.

Friends of the other "discoverers" have often stated that as Long made no publication of his work he deserved no credit for it. To this Dr. J. Marion Sims responds very forcibly as follows:\*

"Now upon this point Long, Wells, Morton and Jackson stand individually upon the same level.

Long exhibited to medical men and to the community his operations under ether in 1842. Wells exhibited to medical men and to the community his operations of the extraction of teeth under nitrous oxide gas in 1844. Morton exhibited to medical men and the community the use of his secret remedy "Letheon," 1846, as an anæsthetic. But Morton was fortunate in showing his patent remedy to the great surgeons of Boston, and it was not Morton, but it was Warren and Hayward and Bigelow who performed the operations to which the world owes the immediate and universal use of anæsthesia in surgery. If Morton could have had his way he would have deodorized the ether and kept it secret from the world. Neither Wells nor Morton nor Jackson ever published a word on the subject till it burst forth in a blaze from the labors of the hospital surgeons already named. When Warren and Hayward and Bigelow proved the real greatness of the discovery [and published it broadcast], then it was that Wells, Morton and Jackson began the war of pamphlets, and not till then did either of them publish in any scientific journal a line about anæsthesia."

THE FAMOUS ETHER CONTROVERSY.

In 1849 Morton petitioned Congress for a reward for his discovery. He was at once opposed by Jackson and the friends of Wells, who was then dead. The celebrated ether controversy, thus begun, occupied the attention of Congress for many years, and was characterized by the greatest animosity between these former bosom friends and companions.

For five years Long refused to take part in the conflict, but finally in 1854, persuaded by his friends that in that way alone could he obtain recognition of his claims, he wrote to Senator Dawson giving an account of his work. It seems that Dawson was a friend of Jackson, for he wrote to him of this new claimant and requested him to investigate his case. This Jackson did, calling upon Long at his home in Athens on March 8th, 1854.

THE INTERVIEW BETWEEN LONG AND JACKSON.

At this interview Hon. C. W. Andrews, a prominent justice,

\* Boston Medical and Surgical Journal, Nov. 1846.

† Va. Med. Monthly, Oct. 1893.

\* Va. Med. Monthly, May, 1877.



was present, and certifies that after satisfying himself of the genuineness of the claims, Jackson proposed to Long to lay their claims conjointly before Congress—he, Jackson, to claim the discovery, and Long to claim the first practical use,—his object evidently being to get ahead of Morton.

This proposition Dr. Long rejected, being satisfied that he was entitled to both. In a letter to Hon. D. L. Swain, ex-governor of North Carolina, which I have here, he says in regard to this transaction: "The only ground Dr. Jackson urged for his right to the discovery was that while suffering with pain and dyspnoea, in February, 1842, from breathing chlorine gas, he inhaled ether and found that while under its influence he was free from pain. He does not claim that he suggested its use to prevent pain in surgical operations until more than one year after my first operation was performed. I cannot give the exact date when I was first led to believe that ether would prevent pain in surgical operations, but I know it was as early as February, 1842."

Now in 1839 Pereira, in his "Elements of Materia Medica," states: "The vapor of ether is inhaled to relieve the effects caused by accidental inhalation of chlorine gas. If the air be too strongly impregnated with ether, stupefaction ensues."

So there was very little new in Dr. Jackson's "discovery," and a mere untried inference hardly deserves the title of discovery.

Dr. Jackson finally acknowledged the justice of Dr. Long's claims and wrote to Senator Dawson to that effect.

On April 15th, 1854, the appropriation bill was up before the Senate for its final reading. The friends of Wells and Morton, relying on the volumes of manuscript they had presented, were confidently awaiting the result, when Senator Dawson arose and said that he had a letter from Dr. Jackson which acknowledged that a Dr. Long in Georgia had undoubtedly used ether before any of the claimants for the appropriation.

Coming as it did from so prominent a contestant, this announcement fell like a thunderbolt on the rival claimants, and from that time they seem to have lost all hope of gaining the reward and passively allowed the bill to die.

Desirous only of preventing another from being recognized by Congress as the discoverer, and not wishing any pecuniary reward himself, Long never pushed the matter farther, and his documents of proof were never even brought up before Congress.

I have here an interesting memento of that conference between the two discoverers, in a card on which Jackson has written a note to Long. On one side it reads:

"For Dr. C. W. Long,  
of Athens, Ga.  
C. T. Jackson,  
New York Hotel.  
(over)"

and on the reverse:

"Telegraph from J. L. Hayes, Washington.  
'Assignee struck out by request of Mr. Everett.'  
Bill probably will come up in House July next."

Edward Everett was then senator from Massachusetts. In

the transactions of the Senate, April 19th, 1854, I find the following explanation of the bill by Senator Walker:

"The bill as amended recites that a discovery of anæsthesia has been made—that it is believed the discovery was made by some one of the following persons, W. T. G. Morton, Chas. T. Jackson and Horace Wells, but it does not appear to the satisfaction of Congress which of those parties was the original, true and first discoverer thereof. It proposes to appropriate \$100,000.00 as a recompense for the real discoverer. In order to determine this it shall be the duty of the district attorney of the United States for the Northern District of New York, to file in the circuit court of the United States for that district a bill of interpleader wherein reciting the act or its substance, the Secretary of the Treasury shall be complainant, and W. T. G. Morton, Chas. T. Jackson and the personal representatives of Horace Wells or any other person who may make application to the court for that purpose shall be defendants. The issue is to be which of the parties named was the original, true and first discoverer of anæsthesia, and the court is to decide which one that is and direct that the sum of \$100,000 be paid over to him."

At the instance of Senator Dawson Dr. Long's name was also inserted in the bill.

I have carefully searched the Congressional Records and find that this bill never came up before the House for final passage, and consequently never reached the district court of New York. It seems to have been abandoned.

Several years later Dr. Jackson wrote an article in the Boston Medical and Surgical Journal giving Long the credit for the first use of ether in surgery. I have here Dr. Long's copy of that journal. The communication is so important that I will read most of it:

"The Boston Medical and Surgical Journal.  
Boston, Thursday, Apr. 11, 1861.

#### FIRST PRACTICAL USE OF ETHER IN SURGICAL OPERATIONS.

*Messrs. Editors:*—At the request of the Hon. Mr. Dawson, U. S. Senator from Georgia, on March 8th, 1854, I called upon Dr. C. W. Long, of Athens, Georgia, while on my way to the Dahlonega gold mines, and examined Dr. Long's evidence, on which his claims to the first practical operations with ether in surgery were founded, and wrote, as requested, to Mr. Dawson, who was then in the U. S. Senate, all I learned on the subject. From the documents shown me by Dr. Long, it appears that he employed sulphuric ether as an anæsthetic agent:

1st, March 30th, 1842, when he extirpated a small glandular tumor from the neck of James M. Venable, a boy in Jefferson, Georgia, now dead.

2nd, July 3rd, 1842, in the amputation of the toe of a negro boy belonging to Mrs. Hemphill, of Jackson, Ga.

3rd, Sep. 9th, 1843, in extirpation of a tumor from the head of Mary Vincent, of Jackson, Ga.

4th, Jan. 8th, 1845, in the amputation of a finger of a negro boy belonging to Ralph Bailey, of Jackson, Ga.

Copies of the letters and depositions proving these operations with ether were all shown me by Dr. Long. \* \* \*

I then called on Profs. Joseph and John Le Conte, then of the University of Georgia, at Athens, and inquired if they knew Dr. Long, and what his character was for truth and veracity. They both assured me that they knew him well, and that no one who knew him in that town would doubt his word, and that he was an honorable man in all respects.

Subsequently, on revisiting Athens, Dr. Long showed me his folio journal, or account book, in which stand the following entries:

'James Venable

March 30th, 1842, Ether and excising tumor, \$2.00

May 13th, Sul. Ether, .25

June 6th, Excising tumor, 2.00'

On the upper half of the same page, several charges for ether sold to the teacher of the Jefferson Academy are recorded, which ether Dr. Long told me was used by the teacher in exhibiting its exhilarating effects, and he said the boys used it for the same purpose in the academy. I observed that all these records bore the appearance of old and original entries in the book.

On asking Dr. Long why he did not write to me or make known what he had done, he said, when he saw my dates he perceived that I made the *discovery* before him, and he did not suppose that anything done after that would be considered of much importance, and that he was awakened to the idea of asserting his claims to the first practical use of ether in operations, by learning that such claims were set up by others for this merit, and consequently he wrote to the Georgia delegation at Washington, stating the facts which Senator Dawson had requested me to inquire into.

I have waited expecting Dr. Long to publish his statements and evidence in full, and therefore have not before published what I learned from him. He is a very modest, retiring man and not disposed to bring his claims before any but a medical or scientific tribunal. \* \* \*

Had he written to me in season I would have presented his claims to the Academy of Sciences of France, but he allowed his case to go by default, and the academy knew no more of his claims to the practical use of ether in surgical operations than I did.

Boston, April 3, 1861.

CHARLES T. JACKSON, M. D."

The list of operations as given by Dr. Jackson is not complete, as he has omitted the second operation on Venable, and a number of the later operations. In a letter to Dr. Sims, which I have, Dr. Long denies absolutely that he ever acknowledged that Dr. Jackson was the prior discoverer. He had been led to infer that ether had anæsthetic powers several months before he got a chance to verify it, and before Jackson claims to have made similar inferences, but he dated his claims of discovery from the time of his first practical demonstration. Before that it was a mere supposition, as was Jackson's also.

But barring these inaccuracies, Dr. Jackson's paper, coming as it does from one who so zealously coveted the title of discoverer, is a remarkable admission.

The interview between Long and Jackson must have been most amicable, and Long evidently felt the greatest respect for Jackson, as shown in the following letter:

"ATHENS, GA., Nov. 15th, 1854.

DR. C. T. JACKSON.

Dear Sir:—I design to prepare an article with the proofs of the priority of my claims of the discovery of the anæsthetic powers of ether and of its applicability to surgical operations. I design having this published in pamphlet form for distribution among the members of the medical profession, and I expect to present such proof with the article as will satisfy all that I am entitled to all I claim.

Ours are rival claims, and permit me, sir, to say that although our claims are conflicting, I would not knowingly say anything in the article which would be displeasing to you. I entertain high respect for you as a gentleman and man of science and feel honored by your acquaintance.

Still it becomes each one of us to use all honorable means to advance his own claims, and I know you will not blame me for attending to this matter, which so much concerns my reputation.

Shall it meet with your approbation, I may refer to your admis-

sions to Hon. W. C. Dawson and myself, of the belief of the correctness of my claims. I will, however, make no allusion to your letter to Mr. Dawson or to the conversation held with myself unless it meets with your sanction. . . .

Your obedient servant,

C. W. LONG."

#### MORTON'S PATENT.

It has often been stated by the friends of Morton that he never attempted to enforce his patent. This statement has lately been reiterated by his wife in McClure's Magazine. On this point the following letter from a prominent army surgeon to Long may be of interest:

"U. S. MARINE HOSPITAL,  
CHELSEA, MASS., April, 1859.

DR. CRAWFORD W. LONG, Athens, Ga.

Sir:—Hon. Judge Hyllier, Solicitor of Treasury Department, informed me about a year since, and recently repeated the same, that some years since you used sulph. ether as an anæsthetic and had a record of the same. If it is not asking too much of you, I would be greatly obliged if at your earliest convenience you would forward me a statement of the facts.

I take the liberty to ask this of you because Mr. W. T. G. Morton, to whom in conjunction with Dr. C. T. Jackson a patent was granted in Nov., 1846, for using ether, has brought a suit against me as a government officer for an infringement of his patent.

Judge Hyllier was confident that you could furnish me with proof sufficient to satisfy a jury that you used it way before he or Jackson claimed to have made the discovery. I should have asked for these proofs through my attorney and had them properly witnessed, etc., but the Secretary of the Treasury having decided that I used the article on my own responsibility and therefore the Govt. were not bound to defend me, I wish to save as much expense as possible.

Very respectfully,

[Signed] CHARLES A. DAVIS, M. D.,

Physician and Superintendent."

In reply Long gives a detailed account of his work, and then adds: "I presume Dr. Jackson is not party to the prosecution, as I know he entertains no good feelings towards W. T. Morton. If you think proper you can see him and ascertain the character of proof I can make. From the little acquaintance formed with him I entertain a high opinion of him as a gentleman and think he will do me justice notwithstanding he himself claims to have made the discovery and has received several awards."

Dr. Davis's letter was written twelve years after Morton's "Letheon" was patented, and many years after ether was the common property of the world. It was probably Morton's last attempt to get money from the U. S. Government.

The ether controversy was never reopened and Long's work was unknown to the world until 1877, when J. Marion Sims learning of him through accident, investigated his claims, was fully convinced of their merit, and vigorously demanded their recognition by the medical profession. His paper appeared in the Virginia Medical Monthly, May, 1877.

#### THE WILHITE CLAIMS.

This article, which obtained for Long the first recognition of any consequence, was the outcome of a conversation which Sims had with a Dr. P. A. Wilhite, of Anderson, S. C. Wilhite told Sims that he had witnessed the first surgical operation ever done under ether, and recounted Dr. Long's



first case, saying that he was one of four students who were then in Dr. Long's office.

He also said that "he presumed that he was the first person who ever profoundly etherized any one," and told how he was at a quilting party in which the boys and girls had concluded the evening by inhaling ether for sport; how they had caught a negro boy, and as he refused to inhale the ether, had firmly held a handkerchief soaked with ether over his face, when to their horror his breathing became stertorous and he could not be aroused. He then vividly pictured their alarm when they realized that they had murdered a fellow-being, and their determination to leave the country, which was prevented by the timely arrival of a physician who restored the boy to consciousness.

Wilhite then related how when the idea of using ether to prevent pain in surgical operations had occurred to Long, *he had encouraged him by relating the story of the negro boy.*

Dr. Sims at once communicated with Dr. Long and soon convinced himself of the truth of his claims, but unfortunately he failed to investigate Wilhite's statements, but embodied them in full in his article, giving to Wilhite the credit of first intentionally producing profound anæsthesia with ether.

Dr. Sims' paper was given great publicity and the Wilhite story has been accepted as true, and copied by many writers on the subject, most notably by Sir Jas. Paget.\*

The negro boy story lacks probability, as Wilhite did not enter Long's office until 1844, two years after the first operation, as the following letter from Long to Wilhite shows:

"ATHENS, GA., May 20th, 1877.

DR. P. A. WILHITE.

*Dear Sir:*—I received Dr. Sims' article on anæsthesia yesterday and find several mistakes. Dr. Sims states that yourself, Dr. Groves, and Drs. J. D. and H. R. J. Long were students of mine and witnessed the operation performed on Venable in 1842. Your recollection failed you at the time. As it was several years, at least two, before either entered my office, you will see that you were mistaken in giving Dr. Sims this information. You also make a mistake in saying that the first inhalation in Jefferson of ether for its exhilarating effects was before the same persons.

\* \* \* I wrote to Dr. Sims informing him of the errors and asking him if he considered the mistakes of sufficient importance to be noticed, etc.

(Signed) C. W. LONG."

Dr. Wilhite replied as follows:

"ANDERSON, S. C., June 27, '77.

DR. C. W. LONG.

*Dear Doctor:*—Yours of the 22nd inst. is at hand, and I have also just received a letter from Dr. J. M. Sims, which I will answer to-day. \* \* \*

In my statement I did make a mistake in regard to my being present at the first or second operation, which mistake I will correct. But if you still prefer I will send a certificate. \* \* \*

Let me know and I will give you any information or assistance in this great matter.

Yours truly, etc.,

(Signed) P. A. WILHITE."

In the letter to Wilhite, Long makes no comment on the negro-boy incident, but his daughter informs me that he

repeatedly told her that he had never heard of it before it appeared in Sims' article.

It is to be regretted that the justification of Long's claims should have been linked so closely with such misstatements.

Sims sailed for Europe soon after the publication of his article, and Long died in a few months, and Wilhite's statements went unchallenged for many years.\*

Among Dr. Long's papers are many more documents—affidavits of persons operated on and witnesses to them, and letters to different prominent men—but their recital would take up too much time, so I will close with a few words regarding his after life.

In 1842 Dr. Long was married to Miss Caroline Swain, a niece of Governor Swain of North Carolina, a very handsome and attractive woman, who proved a devoted wife. She survived her husband many years.

Long remained in Jefferson for ten years, when he removed to Athens and there spent the rest of his days. By inheritance and professional labors Dr. Long had amassed a fortune, which was largely swept away by the war of secession, and at its close he found himself reduced to poverty, with a large family to support.

Although he soon regained an extensive practice, the desolation of the country and the general poverty of the people made the remainder of his life a continual struggle against poverty. His life, which, up to the time of Dr. Sims' article, had been one of disappointments, after that suddenly became brighter, for from all parts of the world men prominent in the medical profession hastened to give him the credit which had so long been withheld.

His claims were never investigated by the American Medical Association, as he often desired, but many minor societies and the "Eclectic" Medical Association passed decrees in his favor, and a statue was erected in his honor in Paris, France.

But he was not long to enjoy the praise and long-delayed honors which were now heaped upon him. Within a few months, while laboring at the bedside of a delicate patient, he was stricken with apoplexy and died the next day, June 16th, 1878, at the age of sixty-two, poor in worldly goods but rich in the gratitude of his people. His oft-repeated wish to die in harness had been granted.

A strange fatality seemed to hang over the lives of all connected with the discovery of anæsthesia!

Wells, disappointed and disheartened by the rejection of his claims by the French Academy, became insane and committed suicide in 1848.

Morton gave up a very lucrative practice and vainly spent his life in trying to enforce his patent and get a reward from Congress. He died in 1868 from congestion of the brain, brought on by excitement occasioned by an article attempting to deprive him of the honor he so jealously coveted.

Long died in poverty, from apoplexy brought on by overwork in 1878.

Jackson, like Wells, became insane from the bitter contentions of his life and died in an asylum in 1880.

\* In an article in the Virginia Medical Monthly, 1893, Dr. L. B. Grandy, of Atlanta, showed the error of Wilhite's statements.

\* The Nineteenth Century, 1880.

Henri L. Stuart, founder of the Woman's Hospital, and a great New York philanthropist, became interested in Long's claims and presented a portrait of him to the University of Georgia. After seeing it unveiled with great ceremony in the capitol in Atlanta, one year after Long's death, he went to Athens as a guest of the Longs, to visit the grave of the discoverer of anæsthesia. Arriving at night, he waited till morning to fulfil his heart's desire. But this was never gratified. During the night he had a paralytic stroke and died at the home of the Longs after lingering several weeks. At his own request his remains were interred next to those of Crawford Long—two great benefactors side by side.

#### APPENDIX I.

##### DR. LONG'S ORIGINAL PAPER.\*

In the month of Dec., 1841, or Jan., 1842, the subject of the inhalation of nitrous oxide gas was introduced in a company of young men assembled at night in the village of Jefferson, Ga., and the party requested me to prepare them some. I informed them I had not the requisite apparatus for preparing or preserving the gas, but that I had an article (sul. ether) which would produce equally exhilarating effects and was as safe. The company were anxious to witness its effects, the ether was introduced and all present in turn inhaled. They were so much pleased with its effects that they afterwards frequently used it and induced others to do the same, and the practice soon became quite fashionable in the county and some of the contiguous counties.

On numerous occasions I inhaled ether for its exhilarating properties, and would frequently, at some short time subsequent to its inhalation, discover bruised or painful spots on my person which I had no recollection of causing and which I felt satisfied were received while under the influence of ether. I noticed my friends while etherized received falls and blows which I believed were sufficient to produce pain on a person not in a state of anæsthesia, and on questioning them they uniformly assured me that they did not feel the least pain from these accidents. Observing these facts I was led to believe that anæsthesia was produced by the inhalation of ether, and that its use would be applicable in surgical operations.

The first patient to whom I administered ether in a surgical operation was Mr. James M. Venable, who then resided within two miles of Jefferson, and at present lives in Cobb Co., Ga. Mr. Venable consulted me on several occasions in regard to the propriety of removing two small tumors situated on the back part of his neck, but would postpone from time to time having the operation performed, from dread of pain. At length I mentioned to him the fact of my receiving bruises while under the influence of the vapor of ether without suffering, and as I knew him to be fond of and accustomed to inhale ether, I suggested to him the probability that the operations might be performed without pain, and proposed operating on him while under its influence. He consented to have one tumor removed, and the operation was performed the same evening. The ether was given to Mr. Venable on a towel, and when fully under its influence I extirpated the tumor.

It was encysted and about half an inch in diameter. The patient continued to inhale ether during the time of the operation, and when informed it was over, seemed incredulous until the tumor was shown him.

He gave no evidence of suffering during the operation, and assured me, after it was over, that he did not experience the least degree of pain from its performance. This operation was performed on the 30th March, 1842.

This second I performed on a patient etherized was on the 6th June, 1842, and was on the same person, for the removal of the other small tumor. This operation required more time than the first, from the cyst of the tumor having formed adhesions to the adjoining parts.

The patient was insensible to pain during the operation until the last attachment of the cyst was separated, when he exhibited signs of slight suffering, but asserted after the operation was over that the sensation of pain was so slight as scarcely to be perceived. In this operation the inhalation of ether ceased before the first incision was made. Since that time I have invariably desired patients, when practicable, to continue the inhalation during the time of the operation.

Having permitted such a length of time to elapse without making public my experiments in etherization, in order to show the correctness of my statements I procured the certificate of the patient on whom the first operation was performed, the certificate of two who were present at the time of the operation, and also those of his mother, brothers and sisters and a number of his immediate friends who heard him speak of the operations soon after they were performed. The Southern Med. and Surg. Journal\* contained but two of the certificates. I have a number of others which can be seen or read if desired by the Society. My third case was a negro boy who had a disease of a toe which rendered amputation necessary, and the operation was performed July 3rd, 1842, without the boy evincing the slightest sign of pain.

These were all the surgical operations performed by me during the year 1842 upon patients etherized, no other case occurring in which I believed the inhalation of ether applicable. Since '42 I have performed one or more surgical operations annually, on patients in a state of etherization.

I procured some certificates in regard to these operations, but not with the same particularity as in regard to the first operations, from the fact of my sole object in the publication being to establish my claim to priority of discovery of power of ether to produce anæsthesia. However, these certificates can be examined.

The reasons which influenced me in not publishing earlier are as follows:

I was anxious, before making my publication, to try etherization in a sufficient number of cases to fully satisfy my mind that anæsthesia was produced by the ether, and was not the effect of the imagination or owing to any peculiar insusceptibility to pain in the persons experimented on.

At the time I was experimenting with ether there were physicians high in authority and of justly distinguished character who were the advocates of mesmerism, and recommended the induction of the *mesmeric state* as adequate to prevent pain in surgical operations. Notwithstanding thus sanctioned I was an unbeliever in the science, and of the opinion that if the mesmeric state could be produced at all it was only on those of strong imaginations and weak minds, and was to be ascribed solely to the workings of the patient's imagination. Entertaining this opinion, I was the more particular in my experiments in etherization.

Surgical operations are not of frequent occurrence in a country practice, and especially in the practice of a young physician, yet I was fortunate enough to meet with two cases in which I could satisfactorily test the anæsthetic power of ether. From one of these patients I removed three tumors the same day; the inhalation of ether was used only in the second operation, and was effectual in preventing pain, while the patient suffered severely from the extirpation of the other tumors. In the other case I amputated two fingers of a negro boy; the boy was etherized during one amputation and not during the other; he suffered from one operation and was insensible during the other.

After fully satisfying myself of the power of ether to produce anæsthesia, I was desirous of administering it in a severer surgical

\* Read before Georgia State Medical Society in 1852.

\* Dec. 1849.



The first patient to whom I administered ether in a surgical operation was Mr James Mc Venable who then resided within two miles of Jefferson and at present lives in Cobb Co Ga - Mr Venable consulted me on several occasions in regard to the propriety of removing two small tumours situated on the back part of his neck, but would postpone from time to time having the operations performed from dread of pain - At length I eventually turned to him the fact of my receiving business while under the influence of <sup>ether</sup> ether, without suffering and as I knew him to be fond of and accustomed to inhale ether, I suggested to him the probability that the operations might be performed without pain and proposed operating on him while under its influence - He consented to have one tumour removed and the operation was performed the same evening - The ether was given to Mr Venable on a towel and when fully under its influence I ~~excised~~ <sup>excised</sup> the tumour - It was encysted and about half an inch in diameter - The patient continued to inhale ether during the time of the operations and, when informed it was over, seemed incenseless, until the tumour was shown him - He gave no evidence of suffering ~~during~~ the operation, and assured me, after it was over, that he did not experience the least degree of pain from its performance - This operation was performed on the 30th March 1842.

operation than any I had performed. In my practice, prior to the published account of the use of ether as an anæsthetic, I had no opportunity of experimenting with it in a capital operation, my cases being confined, with one exception, to the extirpation of small tumors and the amputation of fingers and toes.

While cautiously experimenting with ether, as cases occurred, with the view of fully testing its anæsthetic powers and its applicability to severe as well as minor surgical operations, others more favorably situated engaged in similar experiments, and consequently the publication of etherization did not "bide my time."

I know that I deferred the publication too long to receive any honor from the priority of discovery, but having by the persuasion of my friends presented my claim before the profession, I prefer that its correctness be fully investigated before the Med. Society. Should the society say that the claim, though well founded, is forfeited by not being presented earlier, I will cheerfully respond, so mote it be.

Not wishing to intrude upon the time of the Society, I have made this short compendium of all the material points stated in my article in the Journal, and if the Society wishes any fuller information on the subject I will cheerfully comply with their wishes.

#### APPENDIX II.

"Georgia, } I, Ange De Laperriere, M. D., do certify that I  
Jackson County. } resided in Jefferson, Jackson County, Georgia,  
in the year 1842, and that some time in that year I heard James M.  
Venable, then of said county, speak of Dr. C. W. Long's cutting out  
two tumours from his neck while under the influence of the inhalation  
of sulphuric ether, without pain or being conscious of the performance  
of the operation.

I do further certify that the fact of Dr. C. W. Long using sulphuric ether by inhalation to prevent pain in surgical operations was frequently spoken of and notorious in the county of Jackson, Georgia, in the year of 1842.

A. DE LAPERRIERE, M. D.

Sworn to and subscribed before me this 30th of March, 1854.

N. H. PENDERGRASS, J. P."

"ATHENS, CLARKE CO., GEORGIA.

I, the undersigned, do certify that in May, 1843, I assisted Dr. R. D. Moore in amputating the leg of a colored boy Augustus, then the property of Mr. Wm. Stroud, who resided in this county; and that I distinctly recollect hearing Dr. R. D. Moore say, If I had thought of it before leaving home I would have tried Dr. C. W. Long's great discovery, namely, the administration of sulphuric ether as an anæsthetic in performing the operation. Having neglected to bring the ether, Dr. Moore finally concluded to influence the

patient with morphia; under which influence the operation was performed.

Jos. B. CARLTON, M. D."

#### APPENDIX III.

FROM DR. LONG'S FIRST STUDENT.

"COHUTTA, GA., Dec. 13th, 1894.

MRS. FRANCES LONG TAYLOR,

*Dear Madam:*—\* \* \* In 1844, soon after I attained my majority, I decided to adopt medicine as my profession, and began to think where and under whom I should begin the preparatory study. My father asked me to choose from among the number of physicians whom I knew the one I preferred to act as preceptor to me.

Knowing Dr. Long so well and believing him to be a man of no ordinary ability, I at once fixed upon him as my choice.

I entered Dr. Long's office in May, 1844, as the first student ever under his care. As I progressed with my studies he saw fit to make known to me his discovery, by the use of which he could perform surgical operations without giving any pain to his patient. [Here follows a description of the first cases.]

Notsatisfied, however, that there was not more to learn about this great discovery, he proposed that we test it further personally, which we did in his office, where with closed doors we administered it to each other to prove its perfect anæsthetic effect and also to discover any bad effect to the subject etherized. Owing to the prejudice and ignorance of the populace Dr. Long was prevented from using ether in as many cases as he might have.

Thus in the two years preceding my entering Dr. Long's office he had had only about six cases in which to try the anæsthetic effects of ether.

The first case that came under his care where its use was applicable after my going into his office was not till January 8th, 1845, which was the case of a negro boy having two fingers to amputate, caused by neglected burn. I, as the only student still with the doctor, he had me to accompany him to see the operation and assist in the administration of the ether. The first finger was removed while under the influence of ether, the little fellow evincing no pain; the second without ether, the child suffered extremely. This was done to prove that insensibility to pain was due to the agent used.

Soon after this, in January, Mr. J. D. Long came into the office as a fellow-student; later, toward spring, came P. A. Wilhite, and in August came Dr. Long's brother, H. R. J. Long. We four remained there at Dr. Long's office as students until the opening of the fall term of the medical colleges. \* \* \*

[Signed] J. F. GROVES, M. D.

Sworn and subscribed to before me, Dec. 15th, 1894.

WM. H. WILSON, N. P."

## THE EARLY HISTORY OF OPHTHALMOLOGY AND OTOTOLOGY IN BALTIMORE (1800-1850).\*

BY HARRY FRIEDENWALD, A. B., M. D., *Associate Professor of Ophthalmology and Otology, College of Physicians and Surgeons, Baltimore, Md.*

An old book tells us that each generation may be looked upon as standing on the shoulders of its fathers. If its vision is clearer, its intellectual view less obstructed, its horizon broader, it is in great part due to the height to which others have raised it, to the support others have given. Unmindful of this, it is apt to exaggerate its greatness and the importance of its own work.

\* Read before the Johns Hopkins Hospital Historical Club, April, 1897.

In the following narrative I have brought together all that I could find relating to the lives and labors of those who, in the earlier years of this century and in our own city, tilled the soil of ophthalmology and otology. Some have been forgotten, few have been accorded deserved recognition.

Are not many of us as ignorant of their names and works as an old physician from whose memories I had hoped to obtain information, but whose response was, "No work was done in Baltimore in those departments of medicine before 1850"? I must confess that when my attention was first drawn to this





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Author

Young, H.H.

Long, the discoverer. 1897

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